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## Depression, anxiety and quality of life in caregiver spouses of veterans with chronic spinal cord injury

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**Objective:** We were curious about the degree of anxiety and depression and their effect on the quality of life of the caregivers of veterans with spinal cord injury (SCI).

**Methods:** A convenience sample of 72 out of 120 caregiver spouses of veterans with spinal cord injury participated in our study. The Hospital Anxiety and Depression Scale (HADS) were considered as a measure of depression and anxiety. The World Health Organization Quality of Life BREF questionnaire (WHOQOL-BREF) was considered to evaluate the quality of life. To compare the caregivers, we enrolled 74 matched caregiver spouses of patients without spinal cord injury.

**Results:** The average age of the spouses was 44.7±6.5. The average time elapsed from the injury was 26.4±3.1 years. There was a significant difference in all domains of quality of life and depression between the caregivers and the control group, but there was not a significant difference in terms of anxiety. There was a negative correlation between depression and age, level of education and quality of life.

**Conclusion:** Mental care support should be implemented for veterans and their spouses in addition to the provided facilities.

**Keywords:** *Veteran, Spinal Cord Injury, Caregiver, Quality of Life, Depression, Anxiety, HADS, WHOQOL-BREF*

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**I**ran-Iraq war ended in 1988, but the sequels still exist on both mental and physical aspects of the veterans and their families (1, 2). The burden of their disability is on the caregivers who are often their wives. As a result, both veteran and the caregiver may suffer from depression and anxiety which are usually overlooked (3). It is not clear that to what extent the veteran's disabilities can affect the quality of life and mental health of the caregiver in the long run. In this study, we aimed to evaluate the level of anxiety and depression and their effect on the quality of life of the spouses of veterans with spinal cord injury.

### Material and Methods

This prospective study was conducted on the caregiver spouses of veterans with spinal cord injury. The data were gathered via collaboration with "the Organization of Veterans and Martyrs Affairs of Iran". One hundred and twenty caregiver spouses were invited to the study out of which only 72 caregiver spouses accepted to enroll. Participants were informed about the study and all signed the informed consent.

We chose a matched sample of 74 women in the control group. Spouses of the patients who were referring to the spine clinic for complaints other than spinal cord injury were asked to enroll in the control group. The control group was chosen through convenient sampling and were matched based on age,

gender, financial matter, the region of living and their type of activity. Both groups of caregiver spouses and control group spouses filled out World Health Organization Quality of Life Brief (WHOQOL-BREF) as well as Hospital Anxiety and Depression Scale (HADS).

#### *The Hospital Anxiety and Depression Scale (HADS)*

The HADS was first developed by Zigmond and Snaith in 1983 and is commonly used to determine the levels of anxiety and depression (4). The HADS is a 14-item scale, and each 7 items measures the anxiety and depression subscales separately. Items are scored using a 4-point rating scale from 0 to 3. The sum score ranges from 0 to 21 for either domains of depression and anxiety; The sum score of 11 and more represents caseness of depression and anxiety; the sum score of 8 to 10 represents borderline level of anxiety and depression; and the sum score of 7 and less represents a normal individual (5). The HADS has been evaluated in terms of validity and reliability in numerous clinical settings, diseases, disabilities and languages (6-8). The HADS has been validated in Persian language by Montazeri et al. (9).

#### *WHOQOL-BREF*

WHOQOL-BREF is an abbreviated generic Quality of Life Scale developed through the World Health Organization (10). This questionnaire measures quality of life. It consists of 26 questions forming 4 subdomains of Physical Health, Psychological Health, Social Relationship and Environment Health. Domains of physical health include Mobility, daily activities, functional capacity and energy, pain and sleep.

Domains of mental health includes self- image, negative thoughts, positive attitude, self-estimate, attitude, learning ability, memory and concentration and mental status (11). This questionnaire has been validated in Persian language (12).

#### *Statistical Analysis*

Continuous data were reported as means with standard deviation, and categorical data were presented as absolute values with percentages. Scores were compared between groups with the use of the independent samples t-test for categorical variables and Pearson correlation for continuous variables.

## Results

Seventy-two spouses (60%) of veterans with spinal cord injury out of 120 invited spouses participated in this study. The average time elapsed from the injury was  $26 \pm 3.1$  years (Table 1).

All domains of quality of life were significantly lower (worse) in caregivers of veterans rather than the control group, implying lower mental and physical health in caregivers of veterans. Moreover, depression scale showed a significantly higher (more depressed) score in caregivers compared to the control group (Table 2).

The negative correlation showed that depression was associated with the following factors: lower educational level, younger people and lower quality of life. In addition, lower quality of life was correlated with higher probability of anxiety (Table 3).

**Table 1: Demographic characteristics of veterans and their caregivers (N=72 couples)**

Characteristics	Veterans	Caregivers
Age; Mean (SD)	48 ( $\pm 5.8$ )	44.7 ( $\pm 6.5$ )
Sex, no. (%)		
Male	72(100%)	0
Female	0	72(100%)
Education, no. (%)		
School	39(54.1%)	53(73.6%)
Undergraduate	24(33.4%)	18(25%)
Graduate and post graduate	9(12.5%)	1(1.4%)
Employment, no. (%)		
Not working	56(77%)	64(89%)
Working	16(23%)	8(11%)
Number of children no. (%)		
0		14(19.5)
1		21(29.1)
2		18(25.0)
$\geq 3$		19(26.4)
Marriage, no. (%)		
Married before injury		27(37.5%)
Married after injury		45(62.5%)

**Table 2: Comparison of WHO-QOL BREF domain scores between caregiver spouses and control group (N=72)**

		Total quality of life	Physical Health	Psychological Quality of Life	Social Relationships	Environmental Quality of Life	Age	Education	Time since marriage
Depression	<i>r</i>	-0.53	-0.52	-0.60	-0.49	-0.41	-0.22	-0.22	0
	<i>p</i>	<0.001	<0.001	<0.001	<0.001	<0.001	0.020	0.020	0.99
Anxiety	<i>r</i>	-0.62	-0.59	-0.64	-0.40	-0.44	-0.13	-0.13	-0.0070
	<i>p</i>	<0.001	<0.001	<0.001	<0.001	<0.001	0.12	0.12	0.95

**Table 3: Pearson Correlation between patients' characteristics and the level of anxiety and depression**

	Caregiver spouses mean (SD)	Control group mean (SD)	P value(One-way Anova)
<b>WHO-QOL BREF scale</b>			
Physical health	56.9(19.2)	60(17.5)	<0.05
Psychological Quality of Life	57.2(18.4)	58.2(18.7)	<0.05
Social Relationships	63.2(41.5)	70.8(53.4)	<0.05
Environmental Quality of Life	64.5(17.3)	68.7(17.6)	<0.05
<b>HADS scale</b>			
Anxiety	9.07 (5)	7.9 (4.3)	0.147
Depression	8.46 (4.5)	6.2 (4.5)	<0.05

\*Correlation is significant at the level of 0.05

## Discussion

In this study, we evaluated the level of anxiety and depression and their effect on the quality of life of the caregiver spouses of veterans with spinal cord injury.

In spite of comparing the caregivers' physical and mental health to the control group, there might be a probability of selection bias among the control group. On the other hand, only 60% of the caregivers accepted to participate which does not completely represent our population.

We found that quality of life in caregiver spouses was worse than the matched control group, and the probability of depression was higher as well. Lower education, younger age and lower quality of life increased the likelihood of depression among caregivers. Socioeconomic status could also influence people in a wide range which is difficult to be fully investigated and matched between groups. Spinal cord injury causes functional limitations and thus, reduction of function departs the patient from the social life which leads to mental and psychological problems. The study of Dravidian et al. showed that there is a high prevalence of psychological problems among veterans (13). On the other hand, many studies showed that the psychological problems of the patients can affect their family, particularly the caregivers (14, 15).

In contrast to the other studies (16, 17), we did not find a correlation between time elapsed since injury and the level of depression and anxiety. We can assume that coping strategies such as religious beliefs and having faith in destiny would have helped these people over

the time to deal with disabilities. The major proportion of caregivers married after the caregiven person had been injured in a situation that they prospectively the lifetime burden.

Arechabala et al. reported the symptoms of depression in caregivers of the patients with chronic illness (18). Also Khalid et al. showed that giving care to a patient can affect the level of depression, anxiety and the quality of life, and they also found a significant correlation between anxiety and depression with the quality of life (16). In the study by Sansoni et al. a significant correlation was reported between anxiety and depression (19). In our study, the rate of depression was significantly higher in caregivers, but there was not a significant difference in the level of anxiety between the two groups. Therefore, we can assume that the structure of the family and proper inter-relationship among the family members can provide the situation where the whole family shares the burden to smoothen the impact of the disability. On the other hand, it is intuitive that the level of anxiety in the general population and control group may be as high as the caregivers so we could not find any difference between these two groups.

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